

Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claims 1-9 (Canceled)

Claim 10 (New): A capacitor formed on a substrate, having an upper electrode, and a lower electrode interposed between the upper electrode and the substrate, with a dielectric between the upper and lower electrodes, at least the upper electrode being made of copper, wherein

the lower electrode is formed in a first recess that passes through a first insulating layer of an interlayer insulating film, wherein top surfaces of the lower electrode and the first insulating layer are formed along a first plane,

the upper electrode and the dielectric are formed in a second recess which passes through a second insulating layer of the interlayer insulating film,

a barrier is provided in the second recess to prevent diffusion of copper into the dielectric,

the lower electrode does not extend into the second recess, and

the dielectric extends out of the second recess on a top surface of the second insulating layer, and wherein a top surface of the dielectric on the second insulating

layer and a top surface of the upper electrode are coplanar.

Claim 11 (New): A capacitor according to claim 10, wherein the lower electrode is also made of copper, wherein a second barrier is provided at the top surface of the lower electrode to prevent diffusion of copper into the dielectric.

Claim 12 (New): A capacitor according to claim 11, wherein the second barrier on the top surface of the lower electrode is a conductive barrier, and wherein bottom and circumferential surfaces of the lower electrode have non-conducting barriers thereon.

Claim 13 (New): A capacitor according to claim 12, wherein the dielectric is made of silicon oxide and the conductive barrier and the non-conducting barriers are respectively made of nitrified metal material and nitrified non-metal material.

Claim 14 (New): A capacitor according to claim 13, wherein the nitrified metal material and the nitrified non-metal material are respectively TaN and SiN.

Claim 15 (New): A capacitor according to claim 13, wherein the nitrified metal material and the nitrified non-metal material are respectively TiN and SiN.

Claim 16 (New): A capacitor according to claim 11, wherein the second barrier is a

conductive barrier and covers all surfaces of the lower electrode.

Claim 17 (New): A capacitor according to claim 10, wherein the dielectric is made of silicon oxide and the barrier is made of a nitrified metal material having conductivity.

Claim 18 (New): A capacitor according to claim 17, wherein the nitrified metal material is TaN.

Claim 19 (New): A capacitor according to claim 17, wherein the nitrified metal material is TiN.